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IS 4639-5 (2000): Petroleum Industry - Terminology, Part 5: Transport, Storage, Distribution [PCD 3: Petroleum, Lubricants and their Related Products]

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भाग 5 परिवहन, भण्डारण, वितरण  
(पहला पुनरीक्षण)

*Indian Standard*

**PETROLEUM INDUSTRY — TERMINOLOGY**  
**PART 5 TRANSPORT, STORAGE, DISTRIBUTION**  
**(First Revision)**

ICS 10.040.75; 75.080

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## FOREWORD

This Indian Standard (Part 5) (First Revision) which is identical with ISO 1998-5 : 1998 'Petroleum industry — Terminology : Part 5 Transport, storage, distribution' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of Petroleum Products Sectional Committee and approval of the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1968 with a view to eliminate the ambiguity arising from different interpretations of terms used in petroleum trade and industry, and to establish a generally recognized terms. Since the industry has progressed manifolds over the years, a need was felt to bring in newer terms. The Committee, therefore decided to revise this standard to completely align with ISO 1998-5 :1998 under the dual numbering system. Accordingly, the title has been changed as 'Petroleum industry — Terminology : Part 5 Transport, storage, distribution'.

It is envisaged to issue this standard in eight different parts, each dealing with a specific aspect. The other parts in this series are as under:

- Part 1 Raw materials and products
- Part 2 Properties and tests
- Part 3 Exploration and production
- Part 4 Refining
- Part 6 Measurement
- Part 7 Miscellaneous terms
- Part 8 General and index

The English version of the text of ISO standard has been retained without deviations for publication as Indian Standard. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

For tropical countries like India, the standard temperature and the relative humidity shall be taken as  $27 \pm 2^{\circ}\text{C}$  and 65  $\pm$  5 percent respectively.

## *Indian Standard*

# PETROLEUM INDUSTRY — TERMINOLOGY

## PART 5 TRANSPORT, STORAGE, DISTRIBUTION

### ( *First Revision* )

#### 1 Scope

This part of ISO 1998 consists of a list of equivalent English terms, in use in the petroleum industry in the area of transport, storage and distribution, together with the corresponding definitions in the two languages.

ISO 1998 is intended to cover the purposes of the part of the petroleum industry dealing with crude oils and petroleum products, that means all related operations arising from the production field to the final user. It is not intended to cover either petroleum equipment, or any operation in the field. However, some pieces of equipment or some operations of exploration and production are defined. The corresponding terms were introduced only when they appear in a definition of a product or process and when their definition was found necessary for understanding or for avoiding any ambiguity. Where a terminology of petroleum equipment is needed, it corresponds to the scope of ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*.

#### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1998-99:—<sup>1)</sup>, *Petroleum industry — Terminology — Part 99 : General and index.*

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1) To be published

#### 3 Term numbering

The General classification and numbering system used in ISO 1998 employs digits grouped in three categories:

x.yz.zzz

where

- x is the part number of ISO 1998, in this case Part 5;
- yy is the subcategory in which the term appears. Part 5 has four subcategories:
  - 10 transport
  - 20 storage
  - 30 distribution
  - 99 acronyms

zzz is the serial number of the individual term.

#### 4 Index

See ISO 1998-99.

#### 5 Order of listing

Terms are listed in serial number order.

##### 5.10 Transport

###### 5.10.010

###### **load on top**

system of cleaning the tanks of a crude oil tanker by collecting washings from each tank in one tank, allowing the water to separate from the oil

**NOTE** The water is discharged overboard, leaving the oil residues in the tank. The next crude oil cargo is loaded on top of the residues.

###### 5.10.020

###### **bill of lading**

negotiable receipt, evidence of contract between shipper and carrier and document of title for the cargo received on board a vessel

**5.10.021**

**certificate of quantity**

statement of cargo quantity delivered to a vessel, measured by the loading terminal.

**5.10.022**

**certificate of quality**

document certifying the original quality of a quantified batch of material issued by the manufacturer or blender of the batch or batches which constitute a cargo

NOTE The certificate of quality details the results of analysis on all properties that are required in the cargo specification, and any further properties required for quantity measurement.

**5.10.023**

**certificate of analysis**

document detailing the results of analysis carried out on a cargo, or part, which may or may not cover the same properties as are details on the certificate of quality

**5.10.024**

**outturn certificate**

statement issued by a receiving party, certifying the outturn quantity

**5.10.025**

**letter of protest**

letter issued by any participant in a custody transfer citing any condition with which issue is taken

NOTE This serves as a written record that the particular action or findings was questioned at the time of occurrence.

**5.10.100**

**tanker**

large ship suitable for transporting crude oil and its products in bulk

NOTE In English, may mean a small ship or a road tanker.

**5.10.101**

**list**

transverse inclination of a ship expressed in degrees

**5.10.102**

**trim**

difference between the fore and aft draught of the vessel

NOTE When the aft draught is greater than the forward draught, the vessel is said to be trimmed by the stern. When the aft draught is less than the forward draught, the vessel is said to be trimmed by the head.

**5.10.103**

**port**

the left-hand side of a ship facing forward

**5.10.104**

**starboard**

right-hand side of a ship facing forward

**5.10.200**

**pipeline**

any section of pipe used for the transfer of liquids or gases

NOTE The French note does not apply to the English language.

**5.10.210**

**line circulation**

circulation of a liquid around a closed pipeline/tank system, to ensure that the section of line is full, usually to obviate the stopping of a pump

**5.10.211**

**line displacement**

comparison of the volumes measured in a source tank and receiving tank after a volume greater than the theoretical capacity of a pipeline between the two tanks has been transferred

NOTE 1 Both tanks should contain sufficient material to prevent air entering the pipeline.

NOTE 2 This method is usually used to ascertain if the pipeline between the source and the receiving tank is full.

**5.10.212**

**line press**

**line pack**

system, in an oil terminal, for introducing liquid into a closed pipeline system, either by pump or gravity

NOTE It is usually used to ascertain the content status of the closed pipeline system.

**5.10.213**

**dropping line**

**line drop**

opening (venting to atmosphere) a tanker's pipelines to allow drainage into a tank(s) where any drained material may be measured

NOTE Done prior to taking ullages, the line drop should include all deck cargo lines, risers and drops prior to taking ullages. When done after completion of a discharge, it should include the vessel's bottom cargo lines. For the purpose of accounting, it is recommended that the draining be confined to as few tanks as possible.

**5.10.214**

**linefill**

for quantity purposes, quantity of liquid equal to

the nominal capacity of the transfer line(s) between transfer points, but for quality purposes, volume of product between the sampling point(s) and/or the individual shore tank(s)

**5.10.215  
pipeline adjustment**

quantity adjustment made to a transferred quantity due to changes in line condition before and after transfer

**5.10.230  
liquefied natural gas transfer line**  
pipe line used for transferring LNG

**5.10.231  
gasified LNG transfer compressor**

compressor used for boosting the pressure of gasified LNG when gasified LNG in the LNG sample vaporizer cannot be transferred to the gas sample holder by its inherent pressure

## 5.20 Storage

**5.20.010**

**fixed-roof tank**

vertical cylindrical storage vessel with a cone- or dome-shaped roof, of either the non-pressure (freely vented) type or the low-pressure type

**5.20.011**

**floating roof tank**

tank in which the roof floats freely on the surface of the liquid contents, except at low levels when the weight of the roof is taken through its supports by the tank bottom

**5.20.012**

**floating cover**

**screen**

lightweight cover of either metal or plastics material designed to float on the surface of the liquid in a tank

NOTE The cover rests upon the liquid surface. The device is used to retard evaporation of volatile products in a tank.

**5.20.014**

**non-pressure tank**

storage tank designed for operation at atmospheric pressure

**5.20.015**

**pressure tank**

storage tank designed for operation at pressures above atmospheric

NOTE Pressure tanks are divided into two main classes:

- a) low-pressure tanks used for volatile products which are liquid at ambient temperatures;
- b) high-pressure tanks used for liquids which are normally in the vapour phase at ambient temperature and at atmospheric pressure.

**5.20.016**

**vapour-tight tank**

tank intended primarily for the storage of volatile liquids, for example gasoline, and so constructed that it will withstand pressures differing only slightly from atmospheric pressure

**5.20.030**

**chamfer**

slanting surface connecting the walls of a tank with its top or bottom surface

**5.20.031**

**virole**

one circumferential ring of plates in a tank

**5.20.032**

**tank lip**

tank bottom plate on the outside of the tank shell

**5.20.033**

**tank shell**

cylindrical part of a storage tank

**5.20.040**

**pipe tower**

large-diameter pipe coaxial with the tank's north-south axis, containing pipes for loading and discharging, measuring instrumentation, the ladder, wiring and other in-tank facilities designed to protect them from the effect of sloshing of the tank contents

**5.20.100**

**offset constant**

height of the lower end of the main sensor from the tank bottom after installation in the tank

**5.20.150**

**residues and deposits**

organic and inorganic material, together with any water dispersed within it, which has separated from the liquid and either fallen to the bottom of the tank containing the liquid, or been left in the tank after the liquid has been pumped out

**5.20.155**

**sludge in a tank**

that element of the material in a tank which is essentially not free flowing

NOTE It consists of hydrocarbon waxes and may contain water/oil emulsions and sediments.

**5.20.210**

**dip hatch**

**gauge hatch**

opening in the top of a tank through which dipping and sampling operations are carried out

**5.20.212**

**ullage lip**

marine term for the reference point on the dip hatch from which manual measurements are made

**5.20.213**

**dip-plate**

striking-plate positioned below the dip-hatch

NOTE Its position should not be affected by bottom or wall movements.

**5.20.215**

**gauge reference point**

point from which the liquid depth is measured

**5.20.216**

**dip-rod**

**dip-stick**

rigid length of wood or metal usually graduated in units of volume, for measuring quantities of liquid in a tank

**5.20.217**

**dip-tape**

graduated steel tape used for measuring the depth of the oil or water in a tank, either directly by dipping or indirectly by ullaging

**5.20.218**

**tape measuring wire**

element connecting the liquid-level-detecting element of a direct-detecting automatic level gauge with the gauge head mechanism

**5.20.219**

**verifying measuring tape**

measuring tape to be used for verification of the level gauge

**5.20.220**

**tape positioner**

guide sliding freely on the strapping tape (6.10.276)

NOTE It is used to pull and hold the tape in the correct position for taking measurements.

**5.20.221**

**dip-tube**

vertical pipe built into a tank for manual gauging

**5.20.222**

**gauge well**

vertical cylindrical structure built into the roof of a floating-roof tank to contain and guide the detecting element

**5.20.223**

**dip-weight**

weight attached to a steel dip-tape, of sufficient mass to keep the tape taut and of such shape as to facilitate the penetration of any sludge that might be present on the dip-point or the dip-plate

**5.20.224**

**gauge head**

housing of the liquid-level-measuring element which may include the local indicator, transmitter, and associated equipment

**5.20.230**

**automatic level gauge**

instrument that continuously measures liquid depths or ullages in storage tanks

**5.20.231**

**guide pole**

vertical tube used in floating-roof tanks to prevent rotation of the roof

NOTE The guide pole may also be used as the still pipe (5.20.236), the support pipe (5.20.237) or the dip-tube (5.20.221).

**5.20.232**

**anchor weight**

weight to which the detecting element guide wires are attached to hold them taut and vertical

**5.20.233**

**bottom guide-wire anchor**

bar, welded to the tank bottom, to which the detecting element guide wires are attached

<b>5.20.234</b> <b>guide wire</b> spring-tensioned solid wire or flexible cable used to guide the travel of an automatic gauge float	specific characteristic (e.g. liquid surface or temperature) of the substance presented to it
<b>5.20.235</b> <b>float</b> detecting element floating on the surface of a liquid in a tank which moves in a vertical direction to follow the change in liquid level	<b>5.20.251</b> <b>displacer</b> surface-detecting element which is suspended from a level gauge and moves in a vertical direction to follow the change in liquid level  NOTE The displacer has a higher mass than the liquid it displaces.
<b>5.20.236</b> <b>still pipe</b> <b>still well</b> vertical pipe built into a tank to contain the liquid-level-detecting element in order to reduce measurement error arising from liquid turbulence, surface flow, or agitation of the liquid	<b>5.20.252</b> <b>main sensor</b> that part of the level gauge that responds to changes in liquid level
<b>5.20.237</b> <b>support pipe</b> still pipe used to support an automatic tank gauge, near or at the bottom of the tank or on the lower part of the tank shell	<b>5.20.253</b> <b>pressure-sensor effective centre</b> point on the sensor from which the hydrostatic pressure head is measured
<b>5.20.240</b> <b>mixer</b> device which provides a homogenous mixture of the liquid within a pipeline or container in order to obtain a representative sample	<b>5.20.254</b> <b>reference sensor</b> part of the level gauge that measure the permittivity (dielectric constant) of the liquid
<b>5.20.241</b> <b>powered mixer</b> mixing device which depends on an external source of power for the energy required to mix the liquid	<b>5.20.255</b> <b>gauge pressure sensor</b> sensor that uses the ambient air as pressure reference
<b>5.20.242</b> <b>static mixer</b> mixing device having no moving parts and located within a pipe or tube	<b>5.20.260</b> <b>remote transmission and telemetering system</b> separate or integral systems used in conjunction with level or temperature-measuring devices to transmit the local readings to some point other than the point of measurement  NOTE Such systems usually comprise a transmitter to convert the readings into a form suitable for transmission to a receiver which presents the readings at a remote location.
<b>5.20.243</b> <b>variable-geometry static mixer</b> mixing device with parts inside the pipe or tube which can be adjusted to modify its characteristic at different flow rates	<b>5.20.261</b> <b>rotating meter</b> meter, the measuring element of which has one or more rotating parts driven by the flowing fluid (e.g. turbine meter and displacement meter)  NOTE The output from the meter can be in the form of electrical pulses, the mean frequency of which is a function of flow-rate.
<b>5.20.250</b> <b>detecting element</b> that part of the equipment which responds to a	<b>5.20.262</b> <b>receiver</b> system which receives signals from a transmitter

**5.20.263**

**indicator**

device which indicates the value of the measurement being made by the gauging equipment

**5.20.264**

**controller**

device which governs the operation of the automatic sampler in order to provide a representative sample

**5.20.270**

**operation checker**

externally operated device, sometimes incorporated in a mechanical level gauge, by which a sudden movement may be imparted to the tape in order to ensure that it moves freely

**5.20.271**

**pressure regulator**

device for the production of a constant pressure at the outlet from varying higher pressure at the inlet

**5.20.275**

**accumulator**

storage provided to absorb pressure pulsations of gasified LNG and to homogenize it

**5.20.280**

**condensate reservoir**

device situated at the base of a gauge to collect and drain off condensate formed within the tape conduit

**5.20.285**

**seal unit**

device that seals the gauge assembly from tank vapours

**5.20.286**

**seal water**

water used in a gas sample holder to preclude contact between the gas sample and the atmosphere

**5.20.287**

**bubbling**

procedure to saturate the seal water of the gas sample holder with gasified LNG for suppressing the effect of the seal water on the gas sample

**5.20.290**

**separating device**

device that separates a small volume of liquid from the batch of liquid that the small volume represents

**5.20.300**

**breathing of containers**

movement of gas (oil vapour or air) in or out of the vents of storage vessels due to alternate heating and cooling

NOTE Particularly applied to diurnal variations in ambient temperature.

**5.20.500**

**gas-dangerous space**

space where gas or vapour may form flammable mixtures when mixed with air

NOTE This term is equivalent to "hazardous area" as described in IEC 79-10:1995, *Electrical apparatus for explosive gas atmospheres — Part 10: Classification of hazardous areas*, for shore tanks and to "gas dangerous spaces or zones" as described in IMO resolution MSC 5 (48) for ships' tanks.

**5.20.510**

**gas-freeing of a container**

displacement of flammable and/or toxic gas or vapour

**5.30 Distribution**

**5.30.010**

**package**

any type of container, such as a drum, barrel, keg, can or bottle

**5.30.020**

**batch**

identified volume of product, the quality of which is covered by a single certificate of quality or certificate of analysis

NOTE The identified volume can be in bulk or packaged.

**5.99 Acronyms**

**See**

5.99.010 LOT load on top 5.10.010

5.99.020 B/L bill of lading 5.10.020

5.99.030 COQ certificate of quality 5.10.022

5.99.040 COA certificate of analysis 5.10.023

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This Indian Standard has been developed from Doc : No. PCD 3 (1814).

### **Amendments Issued Since Publication**

Amend No.	Date of Issue	Text Affected

## **BUREAU OF INDIAN STANDARDS**

### **Headquarters :**

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002  
Telephones : 323 01 31, 323 33 75, 323 94 02

Telegrams : Manaksantha  
(Common to all offices)

### **Regional Offices :**

Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110 002	{ 323 76 17 323 38 41
Eastern	: 1/14 C. I. T. Scheme VII M, V. I. P. Road, Kankurgachi CALCUTTA 700 054	{ 337 84 99, 337 85 61 337 86 26, 337 91 20
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